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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF:

TADASHI KATAFUCHI

: EXAMINER: JOHNSON, J.

SERIAL NO.: 10/068,860

: GROUP ART UNIT: 1764

FILED: FEBRUARY 11, 2002

FOR: SUCCINIMIDE COMPOUND, PROCESS FOR PRODUCTION THE SAME,  
LUBRICATING OIL ADDITIVE, AND LUBRICATING OIL COMPOSITION  
FOR INTERNAL COMBUSTION ENGINE

DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Now comes Tadashi KATAFUCHI who deposes and states:

1. I am the named inventors of the above-identified application.
2. That I completed the master's course of Department of Chemical Engineering, Faculty of Engineering of Tokyo Institute of Technology in March 1973.
3. That I have been employed by Idemitsu Kosan Co., Ltd. of 1-1, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8321, Japan since April 1973 and have been engaged in research on general lubricating oil and diesel engine oil in the Lubricant Research Laboratory of the same company since 1974. I was conferred a degree of Doctor of Engineering by Tokyo Institute of Technology in March 1985.
4. The following examples and comparative example were carried out by me.

Example 1

In Example 1 of the present specification, the capability of acid neutralization of the sample tested was obtained from the pressure variation caused by the formed carbon dioxide gas (the internal pressure increased in 20

seconds and 30 seconds after the addition of sulfuric acid). The results are shown in Table A.

#### Example 4 (Comparative Example 4)

A lubricating oil composition was prepared in the same manner as in Example 1, except that ethylenediamine (having a C/N weight ratio of 0.86) was used as the polyamine in preparing the succinimide compound for the component (b). Its physical properties were evaluated, and the results are shown in Table A.

#### Comparative Example 5

A lubricating oil composition was prepared in the same manner as in Example 1, except that 4.0 % by weight of overbased calcium sulfonate was used as the metal-containing, detergent dispersant of the component (a). The results are shown in Table A.

Table A

	Example 1	Example 4 (Comp. Ex.4)	Comp. Ex.5
Number-average molecular weight of polybutenyl group	1,000	1,000	1,000
Polyamine (C/N weight ratio)	Diethylene- triamine 1.14	Ethylene- diamine 0.86	Diethylene- triamine 1.14
Succinic acid/ Polyamine (molar ratio)	1.0	1.0	1.0
Succinimide (wt.%)	0.5	0.5	0.5
Ca sulfonate (TBN 510) (wt.%)	14.0	14.0	4.0
Internal pressure increase after 20 seconds (kg/cm <sup>2</sup> )	2.92	2.10	-
Internal pressure increase after 30 seconds (kg/cm <sup>2</sup> )	2.92	2.60	0.02 *1
Stability test	○ good	○ good	-

\*1: The internal pressure was also increased after 1000 seconds.

5. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

6. Further deponent saith not.

Tadashi Katafuchi  
Tadashi KATAFUCHI  
Dr. of Engineering

May 2, 2005  
Date